socket™
The Mobile Connection

Bluetooth™ Connection Kit

For Windows 98SE/Me/2000/XP

User's Guide

Contents

Software and Hardware Install 4

Introduction 4

System Requirements 4

Installing the Bluetooth Connection Kit 5
Installing the Software 5
Inserting the Card 5

Installing the Drivers 6

Uninstalling the Software 7
Uninstalling Automatically 7
Uninstalling Manually 7
Operation 7

Getting started 8

Bluetooth Neighborhood 8
Introduction 8
Opening Bluetooth Neighborhood 9
Bluetooth Neighborhood window 10
Profiles and services 11
List view 12

Basic functions 13
Naming your local device 13
Device discovery 14
Service discovery 15
Link establishment 16
Disconnecting 17
Status information 17
View details 18
Online help 19

Local services 20

Bluetooth COM port 20
General information 20
Bluetooth COM port settings 21
Bluetooth COM port link establishment 24

ACTIVESYNC 25
What is Bluetooth ActiveSync? 25
Preparing the Serial Profile COM Port 25
Configuring ActiveSync for the Serial Profile COM Port 26
Starting ActiveSync from your Pocket PC 27

DUN 29
Identifying the DUN COM Port 29
Set up Windows for the New Modem 30
Configuring the Bluetooth Neighborhood Settings for DUN 31
Creating a Bluetooth DUN Connection 32
Starting the Connection from Your Computer 34
Starting the Connection from Your Phone 35

FAX 36
Configuring fax application 36

Local device settings 38

Local profile properties 38
General information 38

Enabling/disabling profile 39

Bluetooth Neighborhood properties 40
General 40
Settings 41
Device discovery 42
Trust 43
Security 45
Bonding 47

Bluetooth unit settings 49
Enabling/disabling Bluetooth unit 49
Indication of Bluetooth unit state 49

Remote device settings 50

Remote device properties 50
General 50
Trust 51

Diagnostics 53

Appendices 54

Appendix A: Profiles 54

Appendix B: List view icons 55

Index 56

Software and Hardware Install

Introduction

This chapter will show you how to install the Bluetooth Connection Kit. The chapter will cover instructions for:

- Installing the Bluetooth Connection Kit (including software and hardware)
- Installing the drivers
- Uninstalling the Bluetooth Connection Kit

After following the instructions in this chapter to install the software and hardware, proceed to the next chapter, *Getting Started*, to learn how to use Bluetooth Neighborhood.

System Requirements

To install all the necessary software and run the Bluetooth Connection Kit, you need:

- An Intel compatible PC (at least 200 MHz processor) running Windows 98SE/Me/2000/ XP
- PC Card Type II or III slot
- At least 100 MB of free disk space

Installing the Bluetooth Connection Kit

Before you can use the Bluetooth Connection Kit, you must install the Bluetooth Software Suite.

Installing the Software

1. Exit all Windows programs.
2. Insert the Bluetooth Connection Kit CD-ROM into the CD-ROM drive of your computer.
3. The setup program should auto-run. Follow the program to install the software in the language of your choice.
4. If the setup program fails to auto-run, use My Computer or Windows Explorer to access your CD-ROM drive. Click on **SETUP.EXE**.
5. Follow the instructions on the computer screen until installation is complete.
6. Restart the computer before inserting the Bluetooth Card. Leave the CD-ROM inside.
7. After you restart your computer, the Bluetooth transmitter icon should appear in the task tray of your computer.

Note: The transmitter icon will have an "X" if the Bluetooth Card is not in the computer, if the antenna is turned off, or if the drivers have not been installed yet.

Inserting the Card

Note: Make sure you have restarted your computer before inserting the Bluetooth Card.

Insert the Bluetooth Card into a CompactFlash-to PC Card adapter. Make sure the card is right-side up, with the blue label on top.

Then insert the combined unit into the PC Card slot of your computer.

Installing the Drivers

When you insert the Bluetooth Card into your computer for the first time, a Windows hardware or device driver wizard will appear. The wizard will search for the following drivers:

- Socket Bluetooth CF Card
- Bluetooth Ethernet Adapter
- Bluetooth RFCOMM Protocol (Windows 2000/ XP only)
- Bluetooth SDP Protocol (Windows 2000/XP only)

Windows 2000/XP: If the "Digital Signature Not Found" screen appears, click **Yes** to continue.

Follow the wizard to install the drivers. The wizard installs only one driver at a time. When Windows asks for the location of the drivers, make sure the Bluetoooth Connection Kit CD-ROM is still inside your computer and type the following (replace X with your CD-ROM drive letter):

- Windows 98SE/Me: X:\Windows\Drivers\Win98
- Windows 2000/XP: X:\Windows\Drivers\W2k_XP

Warning: Do not remove the Bluetooth Connection Kit CD-ROM from the computer until you have installed all the hardware drivers.

The wizard will repeatedly launch until all the drivers are installed.

Note: After you finish installing all the drivers, the "X" will disappear from the Bluetooth task tray icon.

Uninstalling the Software

If you want to remove the Bluetooth Software Suite from your PC, there are two ways to do it.

Uninstalling Automatically

The program will suggest that you have the old version of the Bluetooth Software Suite uninstalled automatically. To do so, follow the onscreen instructions.

Note: When the old version of the Bluetooth Software Suite has been uninstalled automatically, the installation program will ask if you want to restart your computer. Whether you answer yes or no, the program will now begin installing the new application software.

Uninstalling Manually

If you want to uninstall the previous version of the Bluetooth Software Suite manually, select the manual procedure. Then to uninstall:

1. Quit all programs
2. Go to **Start | Programs | Bluetooth Software Suite**.
3. Click **Uninstall Bluetooth Software Suite**.
4. Follow the onscreen instructions to complete the uninstallation.

When you have uninstalled the Bluetooth Software Suite, proceed with the installation of the new software (as described previously in the section INSTALLING THE SOFTWARE.)

Operation

When you have finished the software and hardware installation, you can remove the Bluetooth Connection Kit CD-ROM from your computer. However, whenever operating the Bluetooth Software Suite, the Bluetooth Card must always be inserted inside your computer's PC Card slot. If the card is removed, the Bluetooth radio cannot communicate with other Bluetooth devices.

Getting started

Bluetooth Neighborhood

Introduction

With the Bluetooth Connection Kit, you can establish wireless links between your computer and other Bluetooth-enabled devices. For example, without using an inch of cable, you can:

- Connect to serial devices (legacy applications)
- ActiveSync with another Bluetooth-enabled computer
- Access the Internet by means of dial-up networking
- Send fax messages

WARNING!

While using Bluetooth Neighborhood or the Bluetooth Configuration Tools, you may see options for profiles that are NOT supported by this release of the Bluetooth Connection Kit.

Do NOT use the following profiles, which are not currently supported: Audio, LAN, OBEX, Headset, Network.

Most operations are carried out from the application called the Bluetooth Neighborhood. This is an equivalent to the Microsoft Network Neighborhood/My Network Places. While the latter is an ordinary network, the Bluetooth Neighborhood is a wireless network of Bluetooth devices within range.

The basic functions of the Bluetooth Neighborhood include:

1. Carrying out device discovery—finding out which remote Bluetooth devices are available within your range;
2. Carrying out service discovery—finding out which services (applications) a remote device facilitates;
3. Establishing links to remote devices.

When a Bluetooth link has been established between two or more devices, they can communicate, making use of a great number of possible applications.

Opening Bluetooth Neighborhood

To open the Bluetooth Neighborhood, perform the following steps:

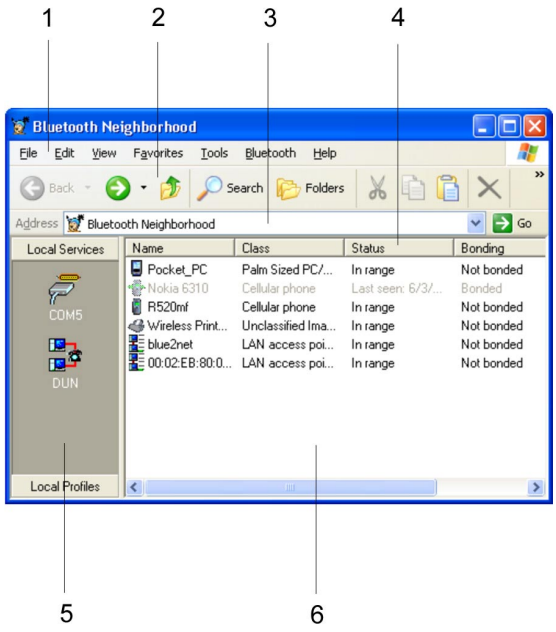
1. Open Windows Explorer.

2. Select the Bluetooth Neighborhood among the folders in Windows.

Alternatively, open the Bluetooth Neighborhood from the shortcut placed on your desktop during the installation:

Bluetooth Neighborhood window

When you open the Bluetooth Neighborhood, the following window appears*:



The figures 1-6 refer to the following explanations:

1: **Menu bar:** Contains standard Windows pull-down menus and a Bluetooth menu. We will deal with the Bluetooth menu in later sections. From the menu bar, you can also access the Bluetooth Neighborhood online help.

2: **Tool bar:** Contains standard Windows tools like Back, Forward, View, etc. In addition, the bar contains such Bluetooth tools as Device Discovery and Disconnect.

3: **Address bar:** Shows which item is currently selected. Also, from this bar you can browse in Windows Explorer.

4: **View details:** Appears when on the View menu you have selected the item View Details. You will see various information on the items in the list view. For more information, see the section "View details".

5: **Local Profiles/Local Services bar:** Shows the local profiles or the local services that your Bluetooth device supports. For more information, see the section "Profiles and services".

6: **List view:** Shows you the contents of the folder, remote device, etc. currently selected. See the section "List view".

The setup of the Bluetooth Neighborhood window depends on your Windows Explorer setup. Thus, the above example does not show all the standard Windows components that may be added to the window.

* The first time you open the Bluetooth Neighborhood, you will not see any remote Bluetooth devices. To discover the remote devices within range, press **F5**.

Note also that as the setup of the window depends on your Windows Explorer setup, the components in the above example may not be exactly the ones shown on your screen.

Profiles and services

Local Profiles

Any Bluetooth device has at least one profile. Each profile is a specific function that a Bluetooth device can perform. In order for two Bluetooth devices to interoperate (i.e., communicate with each other), they must share the same profile.

For example, ActiveSync requires the use of a serial communications port. If you want to ActiveSync a desktop computer and Pocket PC via Bluetooth, both computers must support the Serial Port profile.

The Bluetooth Connection Kit supports a number of profiles, called your Local Profiles. You will find these on the Local Profiles bar.

Local Services

While the function of the Local Profiles bar is to display the profiles your device supports, the Local Services bar is what you will actually be *using* when operating the Bluetooth Neighborhood. Facilitated by a profile, each of the services represents a specific operation that your device can carry out.

In later sections, we will show you how to make use of each of the services that your device features.

To view the Local Profiles, click on the **Local Profiles** bar. To view the Local Services, click on the **Local Services** bar.

For a complete list of the profiles that your Bluetooth device supports, including which services each profile facilitates, see "Appendix A: Profiles".

List view

The list view in the main window contains a list of discovered remote devices. When a remote device is selected in the Bluetooth Neighborhood, the list view will display the services it supports.

Remote devices or services:

The devices shown in the main window list view are the remote Bluetooth devices that your device has discovered during *device discovery.* The icons show what kind of device each remote device is (device class), like the desktop and laptop computer icons in the following example:

A question mark is used to show that the device class is unknown:

Furthermore, it is indicated by the icons whether or not a device is within range as follows:

Within range

Out of range

Note: The list view does not show your local device, only remote ones.

When service discovery has been carried out on a remote device, the list view will change to showing the services facilitated by the remote device in question. Each service is represented by an icon, for example DUN (dial-up networking) and FAX:

Appendix B contains a complete list of the various remote device and service icons.

Finally, the icons will indicate "linked" and "bonded" as follows:

Linked

Bonded

Linked and bonded

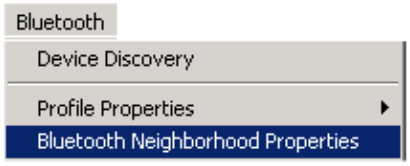
The list view settings can be changed like other Windows list view settings, e.g. you can change the size of the icons or have the elements displayed as a list. For information on settings specifically relevant in connection with the Bluetooth Connection Kit, see the section "View details".

Basic functions

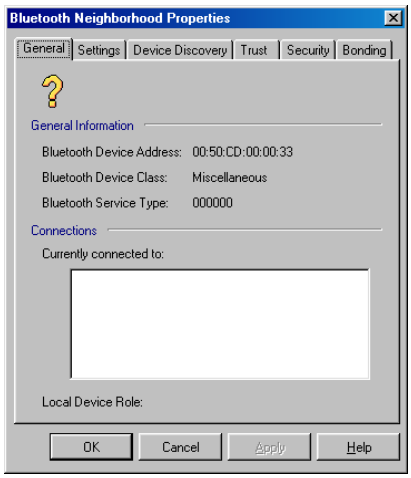
Naming your local device

Before you start communicating with remote users, you should select a device name you want remote users to see. To name your device, perform the following steps:

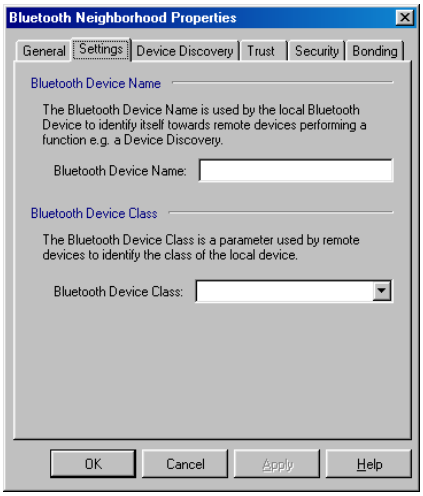
1. On the Bluetooth menu, click **Bluetooth Neighborhood Properties**:



The following dialog box opens:



2. At the top of the dialog box, click the **Settings** tab.



3. In the **Bluetooth Device Name** text box, type the device name you wish remote users to see. For example, "Adam":

4. Click **OK**.

Other Bluetooth devices will now see your device as "Adam".

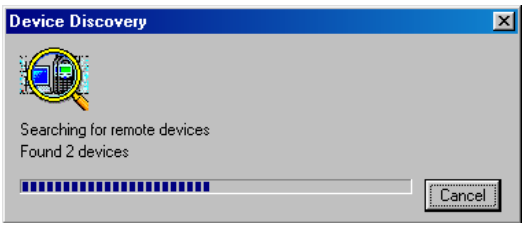
For information on the item **Bluetooth Device Class** in the dialog box shown above, see the section "Bluetooth Neighborhood properties" – "Settings".

Device discovery

Before your local device can communicate with a remote Bluetooth device, it will need to discover the remote devices available within range. This process is called device discovery.

To run device discovery, click on **Device Discovery** on the Bluetooth drop-down menu.

While your device is looking for remote devices, the following dialog box will show the progress of the device discovery:



When device discovery has finished running, the list view will show which remote devices within range are currently available. Also, you can see the previously discovered devices that are no longer available (cf. the section "List view"):

Note: The main window list view does not show your local device, only the discovered remote ones.

Alternative ways of carrying out device discovery:

- When the main window list view is displayed, press **F5**. This will update the list view.
- On the tool bar, click the tool button **Device Discovery**.

Service discovery

Before trying to establish a link to a remote device, it may be useful to know which services the device supports. To find out, run service discovery by double-clicking on the remote device in the main window list view:

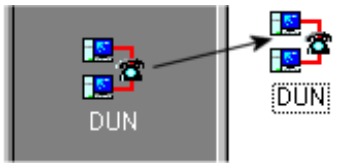
Brent's laptop

When the service discovery has been carried out, the list view will show the services that the remote device supports:

In some cases, it may not be possible to run service discovery. There could be a number of reasons for this: The remote user may have set up his device to reject link establishment attempts (cf. "Bluetooth Neighborhood properties" – "Trust" and "Remote device properties" – "Trust"), the distance between the two devices may be too far, etc. If service discovery (or any other activity) is not carried out successfully, a message box will let you know what went wrong.

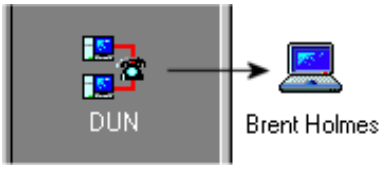
Link establishment

When you have carried out service discovery, you can establish a link to the remote device. You can make use of any service that both your device and the remote device support. Drag the local service to the corresponding remote service:



In the above example, a DUN (dial-up networking) link is being established by dragging the local DUN service to the remote DUN service. (The remote device could be a Bluetooth enabled modem, which would allow you to access the Internet.)

Alternatively, if you know in advance that a remote device supports a particular service, you can skip service discovery. Just drag the local service to the remote device:



In this example, a DUN link is being established by dragging the local DUN service to the remote device.

For information on how to make use of each of the local services when a link has been established, refer to the section about the local service in question.

If link establishment is not carried out successfully: The remote user may have set up his device to reject link establishment attempts (cf. "Bluetooth Neighborhood properties" – "Trust" and "Remote device properties" – "Trust"), the distance between the two devices may be too far, etc. A message box will let you know what went wrong.

Disconnecting

To disconnect a link established to a remote device, perform the following steps:

1. Select (click) the remote device or service that you want your device to disconnect from.

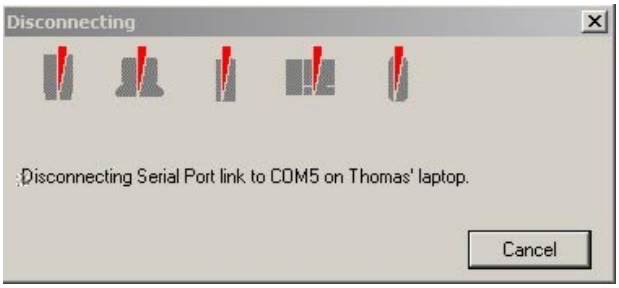
2. On the Bluetooth menu, click the item **Disconnect**:

Alternatively, double-click the remote service that your local device is connected to.

The link will now be disconnected.

Status information

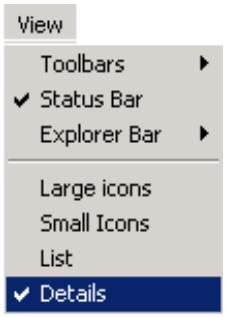
The Bluetooth Neighborhood status bar provides you with information on the item currently selected in the Bluetooth Neighborhood, like the name of a remote device ("Eddie's Notepad"). Also, message boxes keep you informed of the progress of any activity, and let you know if anything goes wrong. The following example is a message box showing that the local device is being disconnected from a remote one:



View details

One of the Windows-like features of the Bluetooth Connection Kit is the possibility of changing the settings of the list view. What is of special interest, however, is the **Details** information of the list view:

1. On the menu bar, click **View**.
2. Click **Details**.

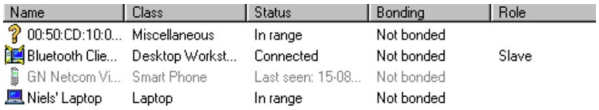


Alternatively, on the tool bar, click the **View** icon the appropriate number of times until the details are displayed:

The type of details displayed depends on the contents of the list view: remote devices or remote services.

Details concerning remote devices

In the main window, the list view can display information on each of the remote devices discovered:



- **Name:** The name the remote user has chosen for his device to present itself with when discovered by other devices.
- **Class:** The type of the remote device (device class), for example a desktop computer, a laptop, or a mobile phone.
- **Status:** Whether the remote device is within range or not.
- **Bonding:** Whether or not your local device and the remote one have *bonded*. See the section "Bonding".
- **Role:** Shows if the remote device is the master or a slave in the piconet.

Details concerning remote services

When you run service discovery on a remote device, the list view will display the following information on the services supported by the remote device:

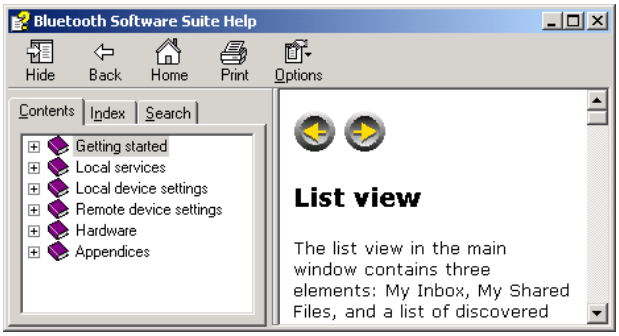
Name	Description	Status
COM5	Serial Port	Connected

- **Name:** The name of the remote service.
- **Description:** The name of the profile that supports the remote service. If your device features the same profile, interoperability between the two devices is possible.
- **Status:** The connection status of the remote service.

Online help

The Bluetooth Connection Kit features online help similar to that of Microsoft Windows. To open the Bluetooth Connection Kit online help, click the menu bar item **Help** or press **F1** on your keyboard.

Help provides you with links to the online version of this User's Guide. The design of the Help function is similar to the Windows Help:



Each tab helps you locate information in a different way. To locate topics, use the **Contents** tab. To look up keywords, use the **Index** tab. To search for text, use the **Search** tab.

Note: The Online Help contains information for features that have been disabled in this release of the Bluetooth Connection Kit.

Local services

Bluetooth COM port

General information

What is a Bluetooth COM port?

Physical communications (COM) ports are used when two serial devices are connected by means of a cable. A Bluetooth COM port, however, is a virtual COM port providing a wireless alternative to a physical one. Bluetooth COM ports make it possible to connect to almost any Bluetooth enabled serial application (legacy application) that would otherwise have been connected using a cable and a physical COM port.

Some profiles require a Bluetooth COM port

As Bluetooth links are wireless, you need no physical COM port to connect to a remote device. However, in connection with some of your local profiles, you need a Bluetooth COM port. This provides an address, so to speak, needed by your legacy application to establish a link to a remote device.

Note: Most users need not worry about Bluetooth COM ports at all; the default settings ensure that you can use all your Local Services without having to make any Bluetooth COM port settings.

The following table shows which services are supported by profiles associated with a Bluetooth COM port. Also, the table shows which Bluetooth COM port each profile is associated with by default:

Service:	Profile:	Default Bluetooth COM port:
ActiveSync	Serial Port	No default
DUN	Dial-Up Networking	7
FAX	Fax	7

You can change the default COM port settings, if you like. For more information, see the section "Bluetooth COM port settings".

Note: The profile Serial Port requires a Bluetooth COM port. However, there is no default Bluetooth COM port associated with that profile. Please see the following sections for more information.

New Bluetooth COM ports and interoperability

Some users may want to add one or more additional Bluetooth COM ports to the computer. This is necessary if you want to make use of the Serial Port Profile, for example to use a serial application like ActiveSync to transfer data between two Bluetooth-enabled computers.

The same profile must be associated with the local Bluetooth COM port and the remote one you want to connect to. Therefore, before you can establish a serial Bluetooth COM port link to a remote device, you must associate the Serial Port Profile with a Bluetooth COM port, and then add the Bluetooth COM port to your computer. For link establishment to be possible, the remote device must have a Bluetooth COM port with the Serial Port associated with it, too.

In "Bluetooth COM port settings" we will look into how you can add and remove Bluetooth COM ports, and change the settings concerning which profiles are associated with which Bluetooth COM ports.

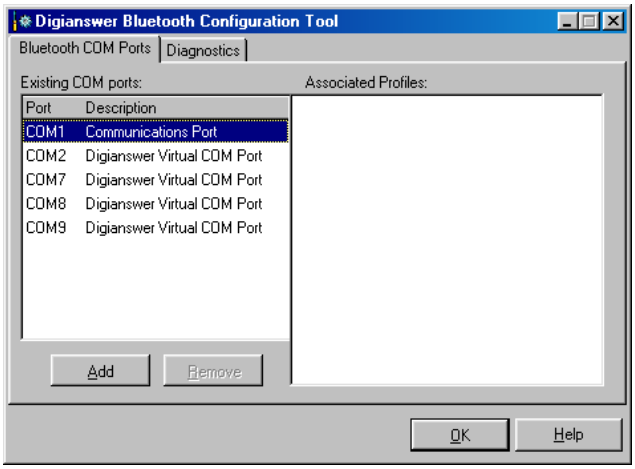
Bluetooth COM port settings

Before you can make use of a Bluetooth COM port link, you must associate one or more appropriate profiles with a Bluetooth COM port and then add the COM port to your Local Services bar (cf. "Bluetooth COM ports" – "General information"). These settings are made by means of the Bluetooth Configuration Tool.

Opening the Bluetooth Configuration Tool:

1. Open the Microsoft Control Panel.
2. Double-click **Bluetooth Configuration Tool**.

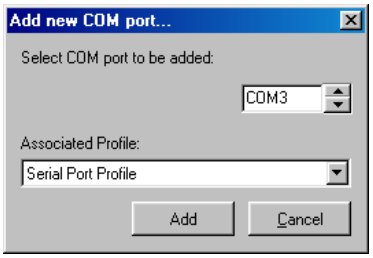
The Bluetooth Configuration Tool dialog box opens:



Adding Bluetooth COM ports

Add a Bluetooth COM port by performing the following steps:

1. In the Bluetooth Configuration Tool window, click **Add.** The following dialog box opens:



2. Use the arrows to go to the Bluetooth COM port you want to add and the profile you want to associate with it. In the above example, the Serial Port Profile is being associated with Bluetooth COM port 3.

   Note: Some programs (like HyperTerminal) cannot detect COM ports higher than 4.

   You will only be allowed to add Bluetooth COM ports that are not already in use. Only available Bluetooth COM ports will appear on the list in the above dialog box.

3. To confirm the settings, click **Add**.

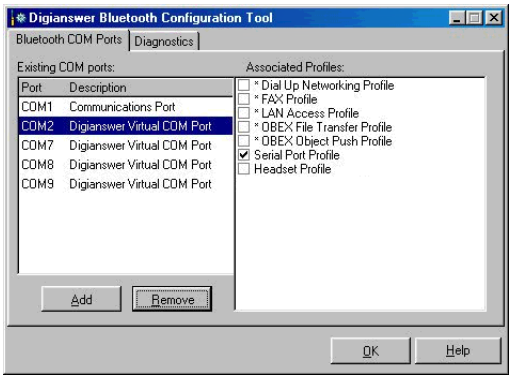
The new Bluetooth COM port will now be included on the Bluetooth Neighborhood Local Services bar:

Note: Before you can use the new Bluetooth COM port, you have to **restart** your computer.

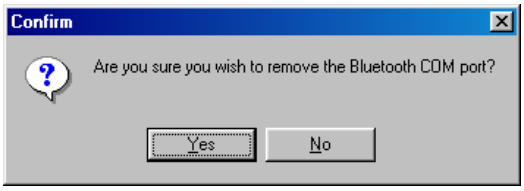
Deleting Bluetooth COM ports

If you want to delete a Bluetooth COM that you no longer need:

1. In the Bluetooth Configuration Tool window, highlight the Bluetooth COM port you want to delete, for example COM2:



2. Click **Remove**. The following dialog box opens:



3. To confirm that you want to delete the Bluetooth COM port, click **Yes**.

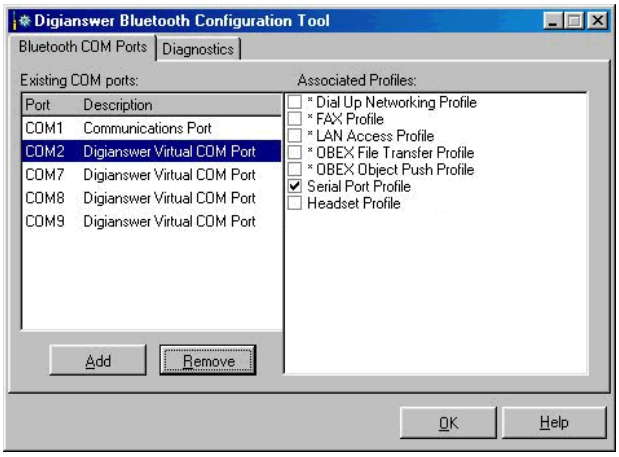
The Bluetooth COM port will now be removed from the Local Services bar.

Note: Some Associated Profiles may appear that are not supported by this release of the Bluetooth Connection Kit. These profiles include: Audio, LAN, OBEX, Headset, and Network.

Associating and removing profiles from existing Bluetooth COM ports

In the Bluetooth Configuration Tool, you can see which profiles are associated with which Bluetooth COM ports. You can change these settings in order to associate the profiles you need with an existing Bluetooth COM port. Also, you can remove a profile from a Bluetooth COM port.

In the following example, it appears that the Serial Port Profile is associated with Bluetooth COM port 2:



To change the settings:

1. In **Existing COM ports**, click the Bluetooth COM port in question.

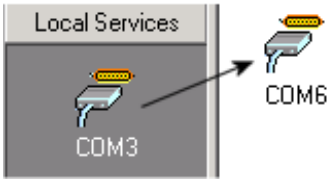
2. In **Associated Profiles**, check the profiles you want to associate with the Bluetooth COM port, or remove the ones you no longer want to be associated with it.

3. Click **OK**.

Bluetooth COM port link establishment

When you have added a Bluetooth COM port to the Local Services bar (as described in the section "Bluetooth COM port settings"), you can establish a link to a remote device.

Drag the Bluetooth COM port icon to the remote device (or device folder). Or run service discovery, then drag the local Bluetooth COM port icon to a remote Bluetooth COM port icon:



The link established between your local device and the remote one can now be used exactly as if it were a wired link.

ACTIVESYNC

What is Bluetooth ActiveSync?

The ActiveSync service lets you create an active connection and/or partnership between your Windows 98SE/Me/2000/XP computer and another Bluetooth-enabled computer. This lets you synchronize contacts, email, files, etc. The following instructions explain how to ActiveSync your Windows 98SE/Me/2000/XP computer and a Windows Powered Pocket PC when both are using the Socket Bluetooth Card.

Preparing the Serial Profile COM Port

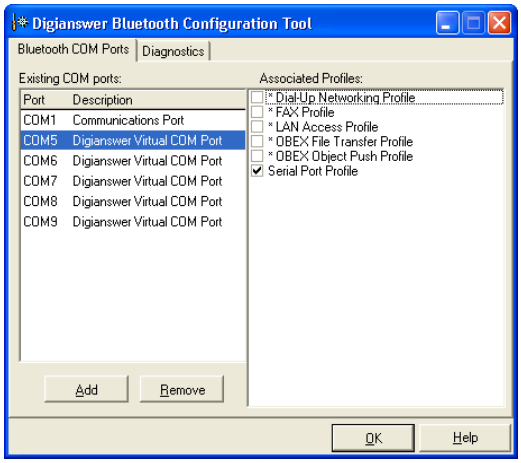
1. In your Control Panel, double-click on the **Bluetooth Configuration Tool**.

2. See if any of the Digianswer Virtual COM ports have a **Serial Port Profile**. Select each port and view the Associated Profiles.

   Remember which COM port number has the Serial Port Profile. You will need it later while configuring ActiveSync.

3. If no COM port has a Serial Port Profile, choose an open COM port (number 8 or below) and select Serial Port Profile. The assigned COM port must be number 8 or below to work with ActiveSync.

   Remember which COM port number you assign. You will need it later while configuring ActiveSync.



4. Click **OK**.

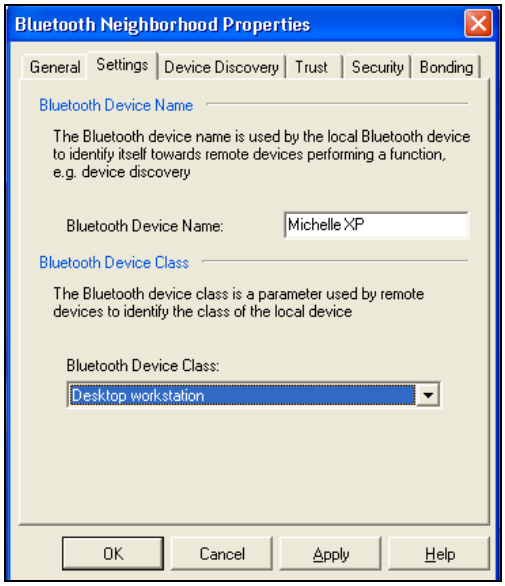
Configuring ActiveSync for the Serial Profile COM Port

1. Start ActiveSync.
2. Go to **File | Connection Settings**.
3. Make sure the following box is checked: **Allow serial cable or infrared connection to this COM port**.
4. In the drop-down menu, select the COM port with the Serial Port Profile.
5. Click **OK**.

Configuring the Bluetooth Neighborhood Settings for ActiveSync

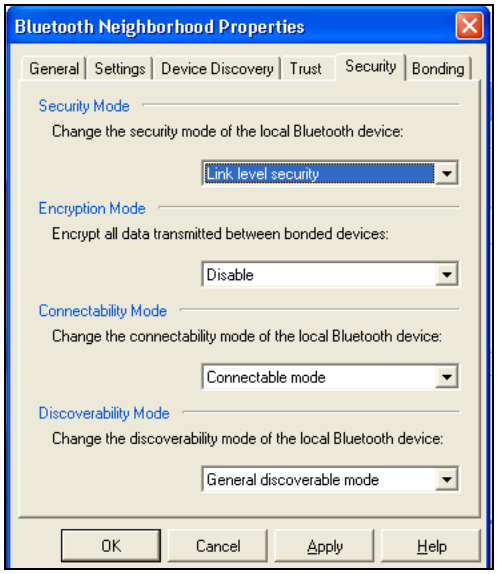
1. Double-click on the Bluetooth Neighborhood icon on the desktop.

2. Go to the Bluetooth menu and choose **Bluetooth Neighborhood Properties**.
3. Click on the **Settings** tab.
4. In the **Bluetooth Device Name** field, enter a name for your computer (e.g., Michelle XP).



5. In the **Bluetooth Device Class** field, select either **Desktop Workstation** or **Laptop**, as appropriate.
6. Click on the **Security** tab.

7. Enter the following settings:
   - Security Mode: Link level security
   - Encryption Mode: Disable
   - Connectability Mode: Connectable mode
   - Discoverability Mode: General discoverable mode



8. Click **Apply**, then click **OK**.

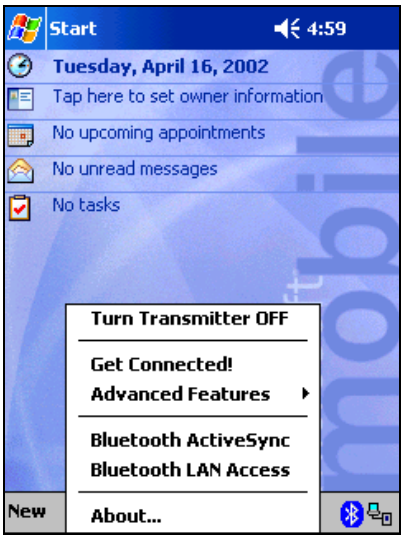
Starting ActiveSync from your Pocket PC

1. Make sure your Pocket PC already has the Bluetooth Connection Kit software installed.

2. Insert the Bluetooth Card into your Pocket PC.

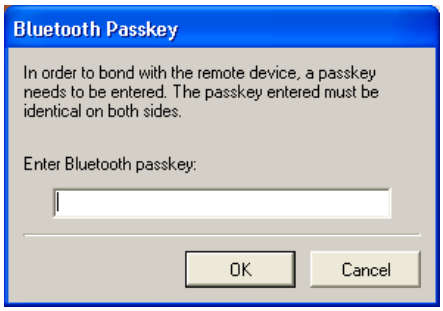
3. From the **Today** screen, click on the Bluetooth icon in the task tray.

4. In the pop-up menu, select **Bluetooth ActiveSync**



5. Follow the Bluetooth ActiveSync screens on your Pocket PC to search for and connect to your Windows 98SE/Me/2000/XP computer.

6. When your Windows 98SE/Me/2000/XP computer asks for a Bluetooth passkey, enter any four digits and click **OK**.



7. When the Pocket PC asks you for a passkey, enter the same four digits and tap **Reply**.

8. Follow the rest of the screens until you have successfully connected via ActiveSync.

DUN

What is Bluetooth DUN?

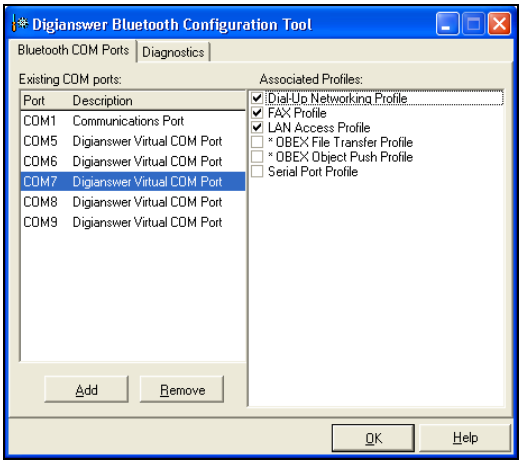
Dial-up Networking (DUN) is used for accessing the Internet.

Bluetooth DUN eliminates the need for a cable for the connection between your computer and the Bluetooth phone. In other words, the Bluetooth DUN service allows you to connect wirelessly to a Bluetooth-enabled phone – by means of which you can access the Internet.

Identifying the DUN COM Port

1. In the Control Panel, click on **Bluetooth Configuration Tool**.

2. Click on each Digianswer Virtual COM Port until you find the one with the Dial-Up Networking Profile.



Note: Some Associated Profiles may appear that are not supported by this release of the Bluetooth Connection Kit. These profiles include: Audio, LAN, OBEX, Headset, and Network.

3. Remember which COM port number has the Dial-Up Networking Profile. You will need it later to configure your DUN connection settings.

4. Click **OK**.

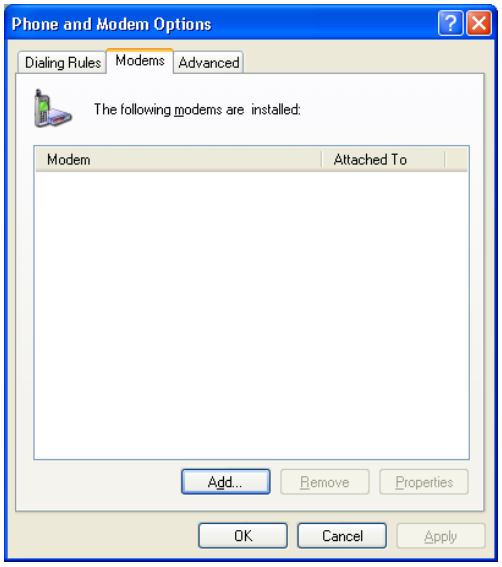
Set up Windows for the New Modem

1. Go to the Control Panel.

2. *Windows 2000/XP*: Click on **Phone and Modem Options**. Click on the **Modem** tab.

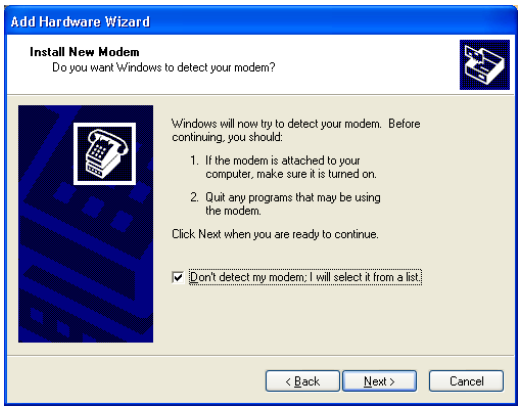
Windows 98SE/Me: Click on **Modems**.

3. Click **Add**.

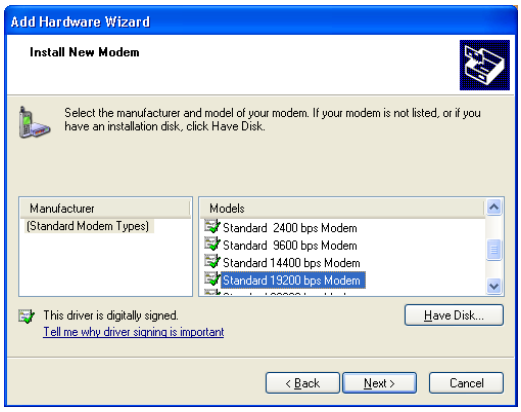


4. *Windows 98SE*: The next screen will ask what type of modem you want to install. Select **Other**, then click **Next**.

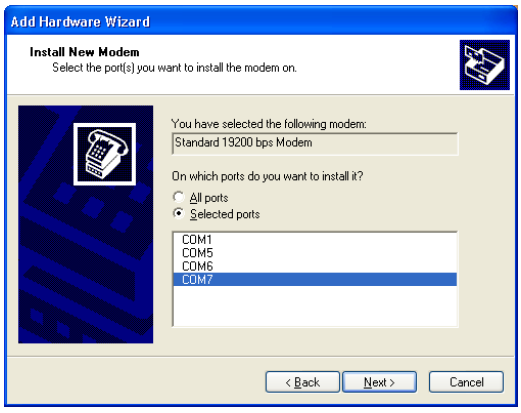
5. Check **Don't detect my modem, I will select it from a list**. Click **Next**.



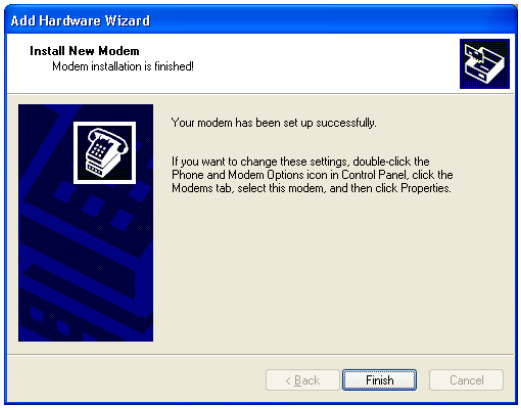
6. Select **Standard 19200 bps Modem**. Click **Next**.



7. Select the COM port that has the dial-up networking profile. Click **Next**.



8. After Windows adds the modem, click **Finish**.



Configuring the Bluetooth Neighborhood Settings for DUN

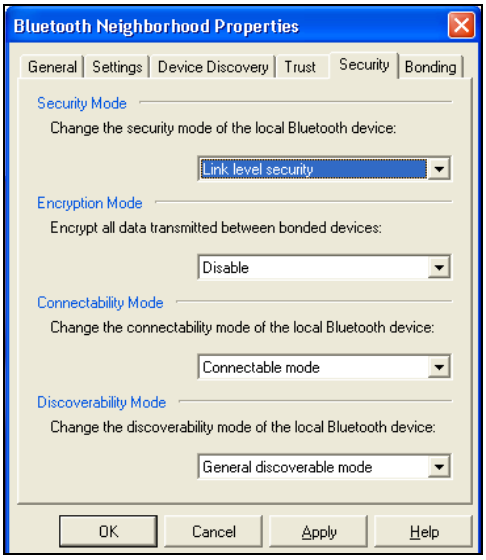
1. Click on the Bluetooth Neighborhood icon on your desktop.

2. Click **Bluetooth | Bluetooth Neighborhood Properties**.

3. Click on the **Security** tab. For **Security Mode**, select the following:

   Ericsson, Nokia, Sony: **Link level security**.

   Motorola: **No security**. Click on the **Bonding** tab and select **Non-bondable mode**.

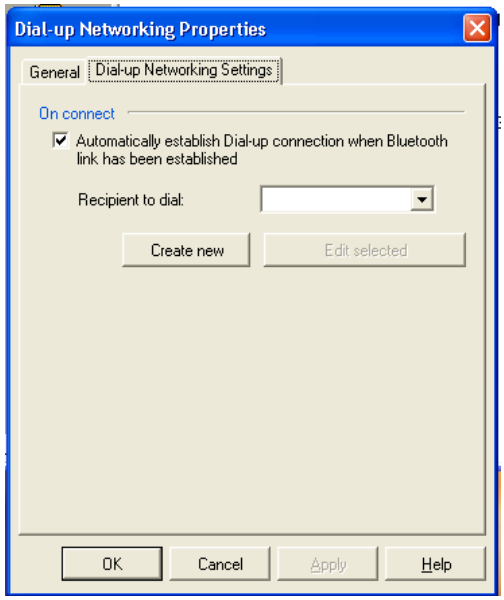


4. Click **Apply**, then click **OK**.

Creating a Bluetooth DUN Connection

1. In Bluetooth Neighborhood, right-click on **DUN**. In the pop-up menu, select **Properties**.

2. Click on the **Dial-Up Networking Settings** tab.



3. Check **Automatically establish Dial-up connection when Bluetooth link has been established**. Click on **Create new**.

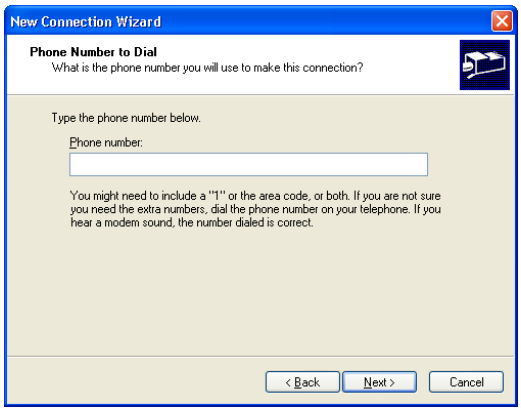
4. *Windows 2000/XP*: In the Type of Connection screen, select **Dial-up to Private Network**. Click **Next**.

   Windows 98SE/Me: Enter a name for your Bluetooth DUN connection. Click **Next**.

5. The Select a Device screen may appear.

   - *Windows 2000/XP*: Select the 19200 bps modem you installed earlier in the COM port with the DUN profile. Click **Next**.
   - *Windows 98SE/Me*: Select **Standard 19200 bps Modem**. Click **Next**.

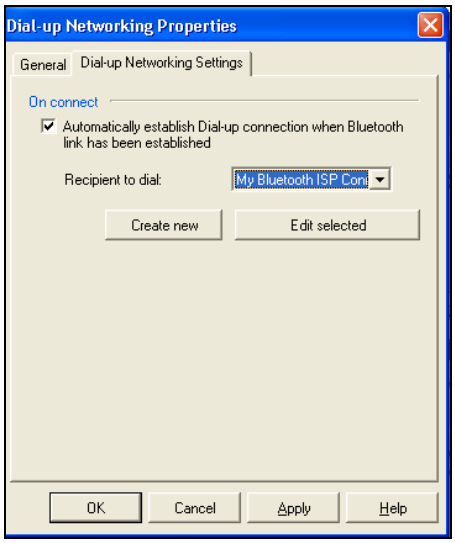
6. In the next screen, enter the dial-up number. Click **Next**.



7. *Windows 2000/XP only*: In the last screen, enter a name for your new connection.

8. Click **Finish**.

9. In the **Recipient to dial:** field, select the Bluetooth DUN connection you just created. Click **Apply**. Click **OK**.



Starting the Connection from Your Computer

Users of MOTOROLA, NOKIA and SONY phones: Follow these instructions.

Users of ERICSSON phones: You can choose to start the connection either from your computer (as described here) or from the phone (as described on the next page).

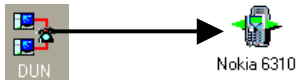
1. *Nokia 6210 only*: This phone has a pre-assigned passkey. You can find it on a label on the connectivity battery. Have the passkey ready (i.e., write it down). You will need it later while bonding the phone and computer.

2. Turn your Bluetooth phone on and set it in Discoverable mode. Refer to your phone's documentation for instructions.

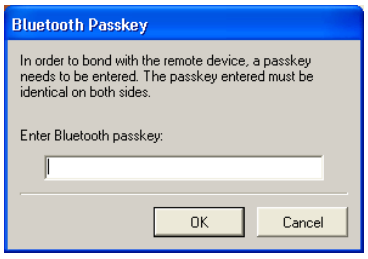
   Exception: The Nokia 6210 with connectivity battery is always in Discoverable mode. Proceed to the next step.

3. In Bluetooth Neighborhood, go to the **Bluetooth** menu. Click on **Device Discovery**.

4. After your computer discovers your Bluetooth phone, an icon for the phone should appear in the Bluetooth Neighborhood screen. Drag the **DUN** icon onto the icon for your phone.



5. Follow the instructions on your phone display and computer screen to complete the Bluetooth connection process.
   - When prompted by the phone and computer, enter a passkey.



6. After successfully bonding the computer and phone, the Dial-up Connection screen should appear. In the **Connect to:** field, select your new Bluetooth DUN connection. Enter your **User name** and **Password**. Click **Connect**.

7. Your phone should start calling your dial-up number. After you successfully connect to your network, the computer screen should report Connected.

Starting the Connection from Your Phone

Users of ERICSSON phones: You can choose to start the connection either from your phone (as described here) or from the computer (as described on the previous page).

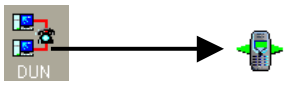
Users of MOTOROLA, NOKIA and SONY phones: Do not follow these instructions. You must start the connection from the computer.

1. Turn on your Bluetooth phone and use it to discover and bond with your computer.

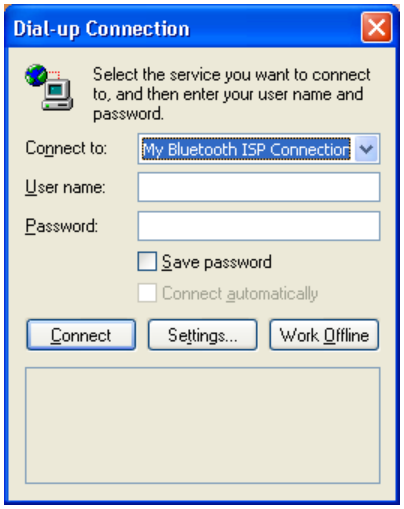
Ericsson phones:

- Go to Menu, press **YES**.
- Scroll to **Extras** or **Connections**, press **YES**.
- Scroll to **Bluetooth**, press **YES**.
- Scroll to **Discover**, press **YES**.
- The phone will begin to search for other Bluetooth devices. In the list of found devices, select your computer. Press **YES**.
- The phone will ask if you wish to **Add to Paired**. Press **YES**.
- Enter a passkey on the phone and computer. Press **YES**.
- When prompted, accept the **Nametag** for your computer.

2. After successfully bonding, go to the Bluetooth Neighborhood screen. Drag the **DUN** icon to the icon of your phone.



3. The Dial-up Connection screen should appear. In the **Connect to:** field, select your new Bluetooth DUN connection. Enter the correct **User name** and **Password**. Click **Connect**.



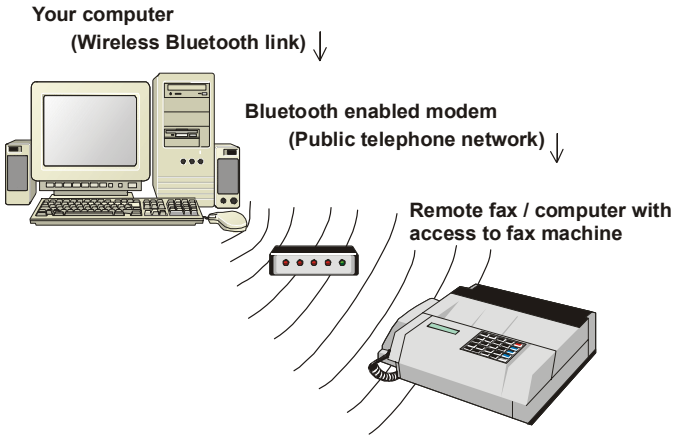
4. Your phone should now start calling your dial-up number. After you successfully connect to your network, the computer screen should report Connected.

FAX

What is Bluetooth FAX?

The procedure for sending and receiving fax messages by means of a computer is basically the same, whether you use Bluetooth or not: First connect a modem to your computer. Then configure your fax application to use the modem as a fax machine (more information below).

The Bluetooth FAX service eliminates the need for a cable for the connection between your computer and the modem. In other words, the Bluetooth FAX service allows you to connect wirelessly to a Bluetooth enabled modem – which can be used as a fax machine:



Connecting computer to Bluetooth enabled modem

The first step is to establish a link between your computer and a Bluetooth enabled modem: Run device discovery to have the Bluetooth Neighborhood list view display an icon representing the Bluetooth enabled modem. Then:

- Drag the FAX icon from the Local Services bar to the icon representing the Bluetooth enabled modem in the list view.

Or:

- First run service discovery on the Bluetooth enabled modem. Then drag the FAX icon from the Local Services bar to the remote Bluetooth FAX service.

Configuring fax application

Now configure your fax application for the modem to be able to work as a fax machine. You can use the Microsoft fax software or a third party application like Symantex WinFax Pro. Follow the onscreen instructions to configure the fax application. For more information, please refer to the online help or other documentation accompanying your fax application.

During the configuration of the fax application, you will be asked to select which port to use with the Bluetooth enabled modem. We recommend that you choose Bluetooth COM port 7, which is the default COM port providing Bluetooth DUN and FAX. (You can choose an alternative Bluetooth COM port if you like. In some cases, this is

necessary as some programs cannot detect COM ports higher than 4. For more information on Bluetooth COM ports, see "Bluetooth COM ports" – "General information" and "Bluetooth COM port settings".)

Local device settings

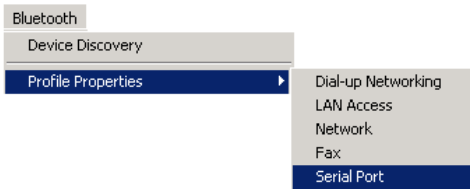
Local profile properties

General information

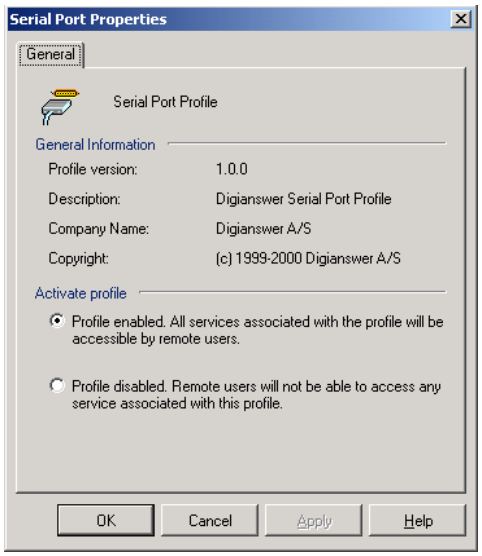
The Bluetooth Connection Kit provides you with general information on the profiles that your device supports. For each profile, you can see:

- Which version of the profile your device features;
- A description, i.e. the name of the profile;
- The company name;
- The copyright holder.

This information is included in the Profile Properties dialog box. To open this: On the Bluetooth menu, point to **Profile Properties**, and click the profile in question, for example Serial Port:



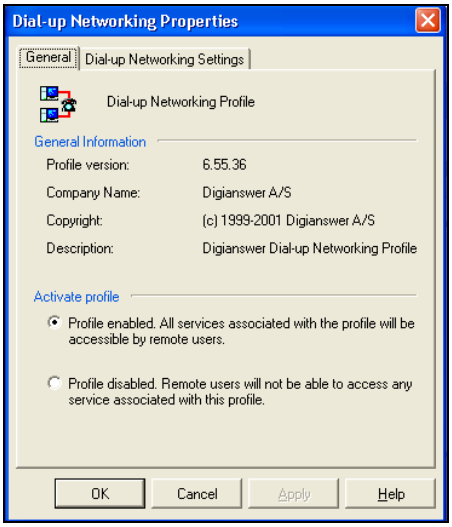
The mentioned information appears from the item **General Information**:



Enabling/disabling profile

You can enable or disable each of the profiles that your device supports. If you enable a profile, remote users will be allowed to access the services associated with the profile. If you disable a profile, remote users will not be allowed to access the services associated with the profile.

Enabling/disabling a profile is done from the Profile Properties dialog box. To open this: On the Bluetooth menu, point to **Profile Properties**, and click the profile in question, for example Dial-up Networking:



In the item **Activate Profile**, you can now enable or disable the profile.

When a profile is disabled, the icon for the profile on the Local Profiles bar will change:

Enabled:

Disabled:

The Local Services bar, too, will be affected when a profile is disabled: The icon(s) for the service(s) supported by the profile will disappear from the Local Services bar.

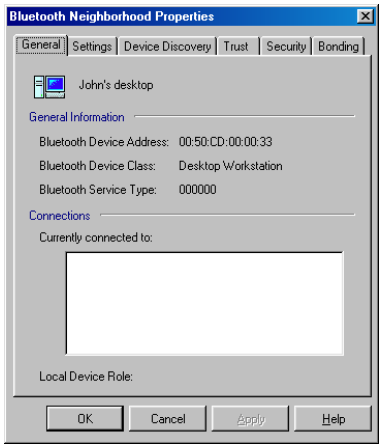
Note: When your computer is connected to a remote device, no profile can be disabled.

Bluetooth Neighborhood properties

General

To view information on the properties of the Bluetooth Neighborhood, you can access the Bluetooth Neighborhood Properties dialog box. To open this: On the Bluetooth menu, click **Bluetooth Neighborhood Properties.**

The Bluetooth Neighborhood Properties – General dialog box opens:



At the top of the dialox box you can see the name of your local device, in this case "John's desktop". (For information on how to name your local device, see "Naming your local device".)

Furthermore, the dialog box contains the items **General Information** and **Connections:**

- **General Information** shows the identity information that, in addition to the name of your device, will be sent to remote devices carrying out device or service discovery on your device. The device address and service type are determined by the Bluetooth hardware, the device class you can set yourself (see "Settings").

- **Connections** shows which remote devices your device is currently connected to, if any. Also, you can see which role your local device plays in the piconet: master or slave.

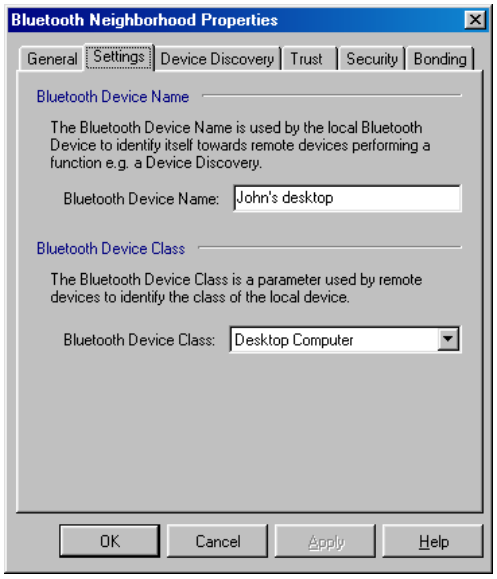
As appears, from this dialog box you can access a number of other dialog boxes: Settings, Device Discovery, Trust, Security, and Bonding. We will deal with each of these in the following sections.

Settings

In the Bluetooth Neighborhood Properties – Settings dialog box, you can set such identity information as the name and class of your local device. To open the dialog box:

1. On the Bluetooth menu, click **Bluetooth Neighborhood Properties.**

2. Click the **Settings** tab.



- **Bluetooth Device Name:** Here you can select a name for your device (cf. "Naming your local device").

- **Bluetooth Device Class:** Here you can provide information on which class of device your computer belongs to: is it a desktop, laptop or server-class computer?

This information will be given to remote devices having carried out device discovery on your local device.

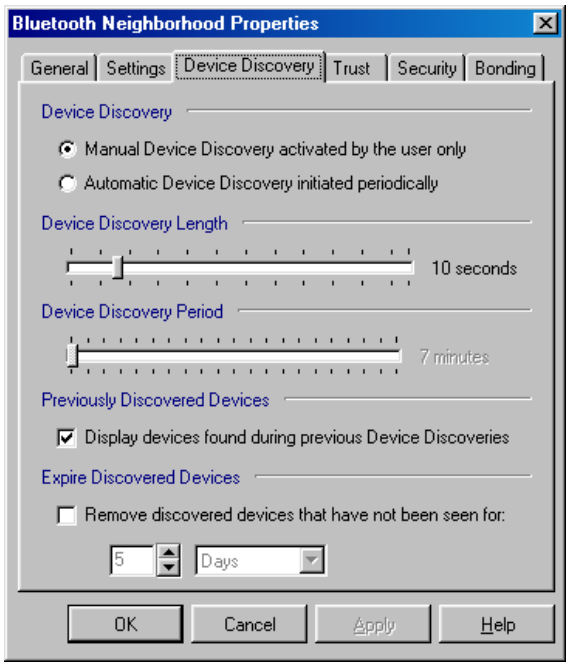
Device discovery

To modify device discovery settings, you use the Bluetooth Neighborhood Properties – Device Discovery dialog box. To open this dialog box:

1. On the Bluetooth menu, click **Bluetooth Neighborhood Properties**.

2. Click the **Device Discovery** tab.

The Bluetooth Neighborhood Properties – Device Discovery dialog box opens:



- In **Device Discovery** you can choose for device discovery to take place only when you activate the function manually (which is the default setting), or for device discovery to be initiated automatically at certain intervals. If you select the latter option so that device discovery will take place automatically, you can set the duration of the interval between device discovery sessions in the item **Device Discovery Period**.

- In **Device Discovery Length** you can set the number of seconds that you want device discovery to last. The default setting is 10 seconds, which should be enough in most cases. However, if for some reason it is difficult for two devices to discover each other, you can increase the duration.

- In **Device Discovery Period** you can set the number of minutes that you want the intervals between automatic device discovery sessions to last. This function is active when in the item **Device Discovery** you have set automatic device discovery to take place periodically.

- In **Previously Discovered Devices** you can have the Bluetooth Neighborhood list view display remote devices discovered during previous device discovery sessions. (This item is selected by default). If this item is not selected, the list view will only display the

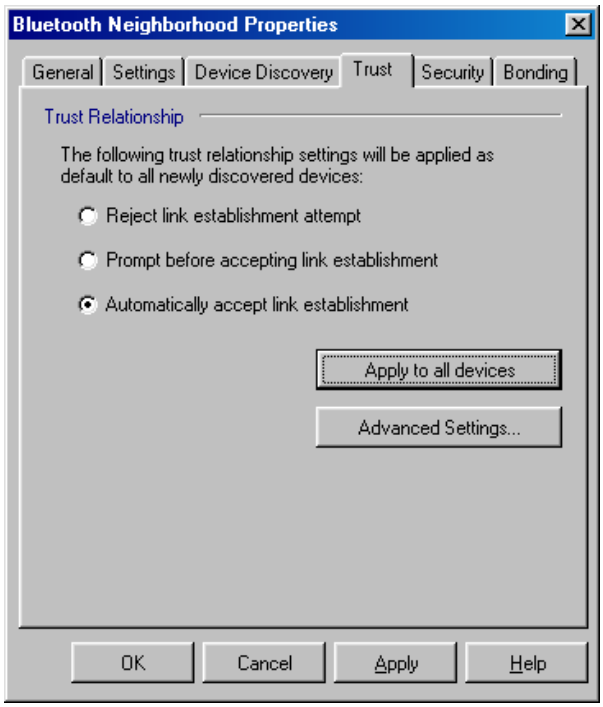
- In **Expire Discovered Devices** you can decide to have discovered remote devices removed automatically from the Bluetooth Neighborhood list view when they have not been seen for a specified period of time. Note that if the dialog box item **Previously Discovered Devices** is not selected, the list view will only display the remote devices discovered during the latest device discovery.

Trust

The Bluetooth Neighborhood Properties – Trust dialog box concerns the trust relationship you want your local device to apply to newly discovered remote devices: How do you want your local device to react if a newly discovered remote device tries to establish a link to it? To open this dialog box:

1. On the Bluetooth menu, click **Bluetooth Neighborhood Properties**.

2. Click the **Trust** tab.



You can decide whether your device should:

– Reject a link establishment attempt; or

– Prompt you before accepting link establishment; or

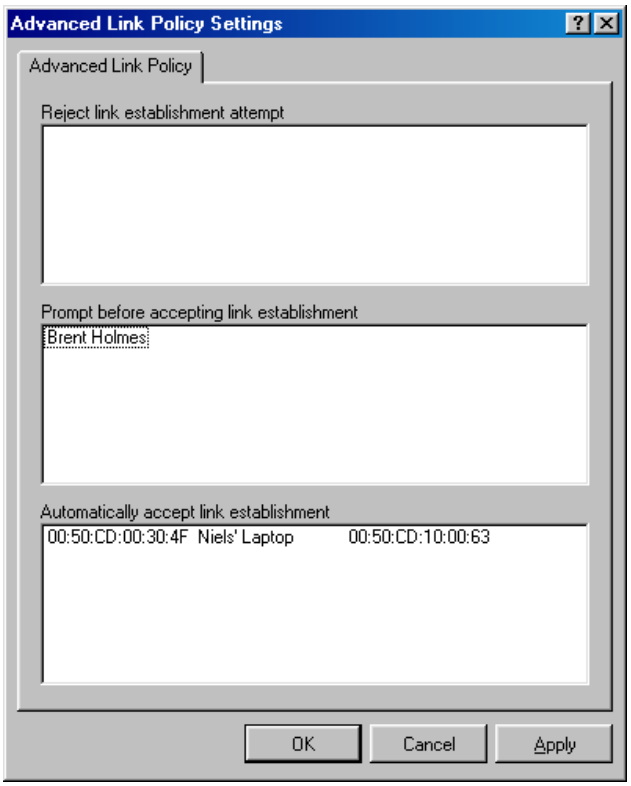
– Accept link establishment automatically. (This is the default setting).

To have the default trust relationship settings applied to all *existing* discovered devices as well as the newly discovered ones, click **Apply to all devices**.

Note: If you want to make trust relationship settings for a particular remote device – rather than for *all* remote devices – you can do so from the Remote Device Properties – Trust dialog box. For information on how to open this, see "Remote device properties" – "Trust".

Advanced link policy

To view or change the trust relationship settings for one or more discovered remote devices: In the Bluetooth Neighborhood Properties – Trust dialog box (shown above), click **Advanced Settings …** The dialog box for Advanced Link Policy Settings opens:



In this dialog box, each discovered remote device is located in one of three boxes: **Reject link establishment attempt, Prompt before accepting link establishment,** or **Automatically**

accept link establishment. The location of each remote device (i.e. the box it is placed in) indicates which default trust relationship settings have been selected for it.

To change the trust relationship setting for a device in the Advanced Link Policy dialog box:

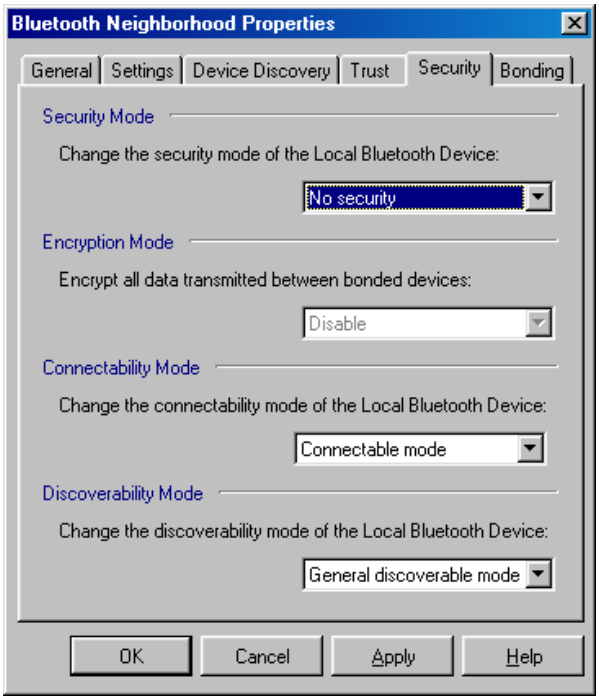
Drag the device from its present position into the box representing the trust relationship you want for the device. The new settings will now be applied to the remote device next time it attempts to connect to your local device.

Security

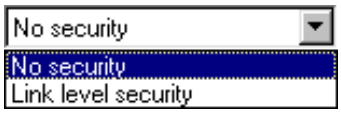
In the Bluetooth Neighborhood Properties – Security dialog box, you can make a number of decisions concerning the security of your local device. To open this dialog box:

1. On the Bluetooth menu, click **Bluetooth Neighborhood Properties**.

2. Click the **Security** tab.



- **Security Mode** can be set to either **No Security** or **Link level security**.

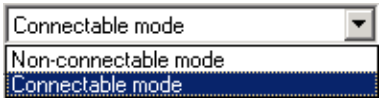


If a device has selected link level security, no remote device can connect to it without bonding (see "Bonding"). Furthermore, only when you have selected link level security can you use encryption (see below).

- **Encryption Mode** can be enabled or disabled. Based on the use of a link key, this feature can only be enabled when link level security has been selected (see above).

If encryption is enabled: When your device is communicating, only the linked devices will be able to understand the data sent between them.

- **Connectability Mode** refers to whether or not remote devices having discovered your device will be allowed to establish a link to it. In other words, selecting non-connectable mode is a way of ensuring that no remote device can connect to your device.



- **Discoverability Mode** refers to whether or not other devices will be allowed to discover your device. In other words, selecting non-discoverable mode is a way of preventing remote devices from discovering your device.

The default settings are as shown in the examples (the illustrations) above.

Note: If devices wanting to communicate have different security settings, **the highest level of security required will be used.** Imagine, for example, that a device requiring no security tries to establish a link to a device requiring link level security. Link establishment between the two devices will then require link level security (i.e. the devices will have to bond, both entering a pass key).

Bonding

Bonding refers to the creation of a link key – a bond – between two devices. Bonding is used when a device requires *link level security* (see "Security" for information on how to do so). When a remote device attempts to connect to the device requiring link level security, the users of both devices will be prompted for a password. They must then enter the same password.

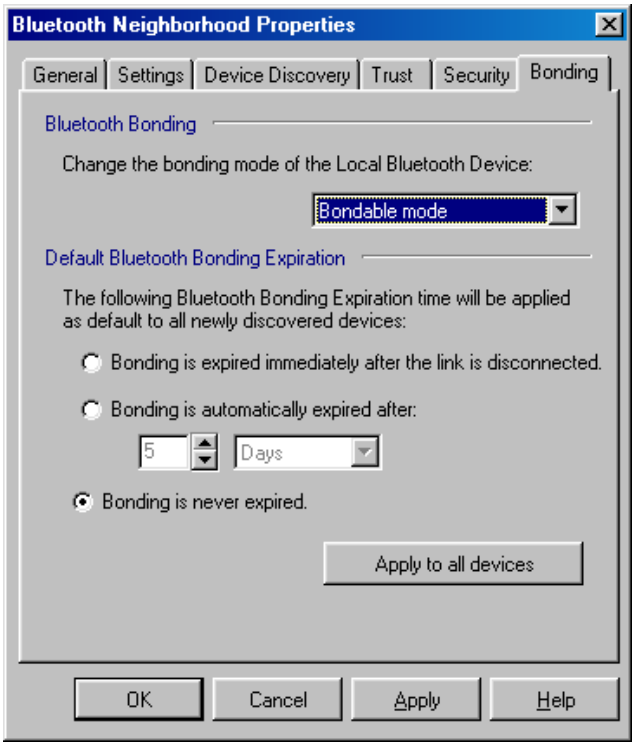
The purpose of bonding is for two devices to be able to identify each other so that no remote device can connect without knowing the right password. This may be convenient if for example you do not want any other device than your own Bluetooth enabled phone to be able to connect to your computer. Other devices trying to connect will be prompted for the password, which prevents them from interfering in the connection.

The duration of the bonding can be set to last beyond the current link; if so, the two devices will only be prompted for the password the first time they connect, i.e. when creating the bond. Both when creating the bond and when making use of an existing one, both devices must be in bondable mode. Below you will find information on how to set both bonding mode and duration.

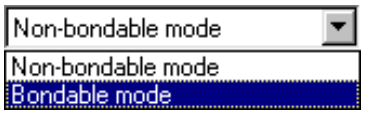
Settings concerning bonding are done in the Bluetooth Neighborhood Properties – Bonding dialog box. To open this:

1. On the Bluetooth menu, click **Bluetooth Neighborhood Properties**.

2. Click the **Bonding** tab.



- In **Bluetooth Bonding**, you can decide whether or not your device should be able to bond to other devices.



The default setting is bondable mode. To be able to establish both a new bond, and to make use of an existing one, your device must be in bondable mode.

- In **Default Bluetooth Bonding Expiration**, you can set bonding to expire when the link is disconnected, after a specified period of time, or never. (The default setting is: Never).

Note: The settings you make in the Bluetooth Neighborhood Properties – Bonding dialog box are default settings that will be applied to all remote devices. For information on how to make settings for the duration of a bond between your device and a particular remote device, see the section "Remote Device Properties" – "Trust".

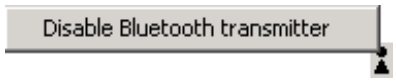
Bluetooth unit settings

The settings of the Bluetooth unit are controlled from the Bluetooth Control Center. From this application, which is located in the lower right corner of the screen, you can enable/disable the Bluetooth unit. Also, the Bluetooth Control Center icon indicates the state of the Bluetooth unit.

Enabling/disabling Bluetooth unit

From the Bluetooth Control Center, you can enable or disable the Bluetooth unit.

1. Right-click the Bluetooth Control Center icon in the lower right corner of the screen.
2. Click **Enable ... or Disable ...:**



Indication of Bluetooth unit state

Located in the lower right corner of the screen, the Bluetooth Control Center displays one of three icons to show the state of the Bluetooth unit:

- Disabled:

  In this state, your Bluetooth device cannot communicate with other devices.

- Enabled but not transmitting:

  Your device is ready to communicate with other devices.

- Enabled and transmitting:

  Your device is communicating with one or more remote devices, or an attempt is being made to establish a link.

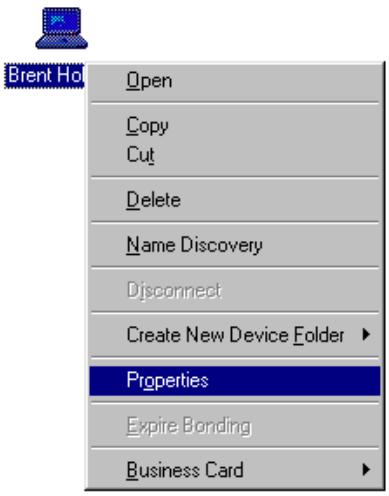
Remote device settings

Remote device properties

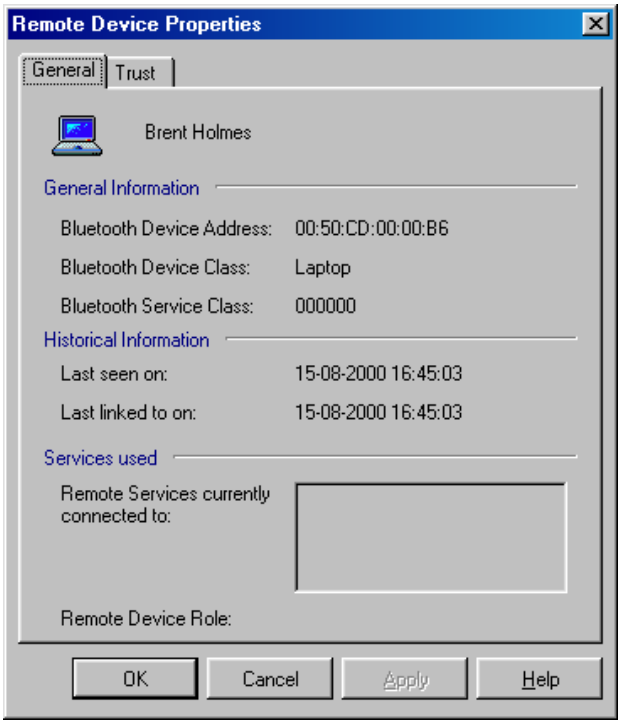
General

For information on the properties of a remote device:

1. Right-click the remote device.
2. Click **Properties**.



The Remote Device Properties – General dialog box opens.



At the top of this dialog box, you will see the name of the remote device.

In addition, the box contains the items **General Information, Historical Information,** and **Services used.**

- **General Information** provides such identity information on the remote device as its address, device class, and service class.

- **Historical Information** tells you when the device was last seen by your device, and when it was last linked to it.

- **Services used** shows which services of the remote device are currently connected to your local device, if any. Also, you can see which role the remote device plays in the piconet, i.e. master or slave.

Trust

In the Remote Device Properties – Trust dialog box, you can make settings for the individual remote device concerning:

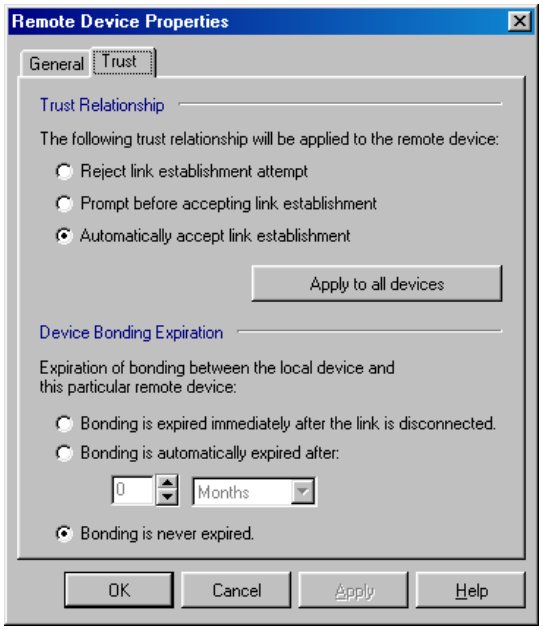
- **Trust relationship**, i.e. the way your local device will react if the remote device attempts to establish a link to it.

- **Bonding expiration**, i.e. if your local device and the remote one bond, how long should the bonding last? (cf. "Bonding").

You can make similar settings in the dialog boxes Bluetooth Neighborhood Properties – Trust (cf. "Trust") and Bluetooth Neighborhood Properties – Bonding (cf. "Bonding"). However, while the settings made in those dialog boxes concern *all* remote devices discovered, the settings in the Remote Device Properties – Trust dialog box concern a *particular* remote device.

To open this dialog box:

1. Right-click the remote device in question.
2. Click **Properties**.
3. In the General dialog box, click the **Trust** tab.



- **Trust Relationship** allows you to define the trust relationship to be applied when the remote device wants to establish a link to your device:

  – Reject link establishment, or

  – Prompt before accepting link establishment, or

  – Automatically accept link establishment. (This is the default setting).

  If you like, you can apply the selected trust relationship to all remote devices (as in the Bluetooth Neighborhood Properties – Trust and Bonding dialog boxes). To do so, click **Apply to all devices.**

- **Device Bonding Expiration** allows you to make settings concerning the duration of bonding between your device and the remote one. You can set the bonding to expire when the link is disconnected, after a specified period of time, or never. (The default settings is: Never)

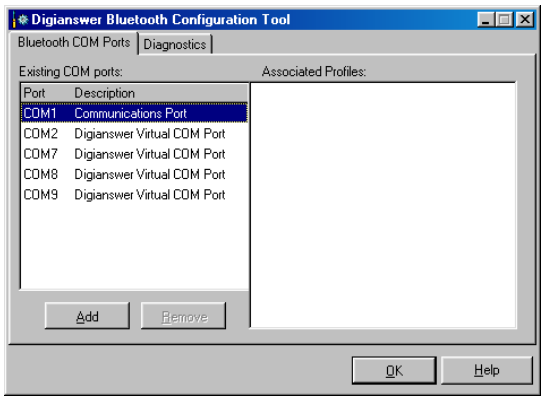
For more information on bonding, see "Bonding".

Diagnostics

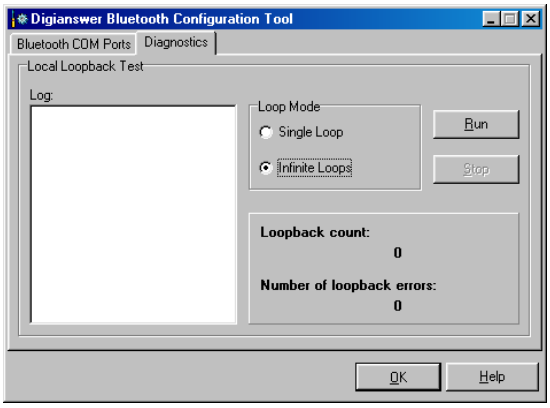
We recommend you verify the Bluetooth Connection Kit hardware has been properly installed by performing the *loopback test*. This test is carried out from the Bluetooth Configuration Tool:

1. Open the Microsoft Control panel.

2. Double-click **Bluetooth Configuration Tool.** The Bluetooth Configuration Tool dialog box opens:



3. Click the **Diagnostics** tab. This will open the window where you can perform a loopback test to check if your hardware is working properly:



4. In **Loop Mode**, select either **Single Loop** (to test a single loop) or **Infinite Loops** (to test a number of loops). We recommend that you choose the latter (which is also the default setting).

5. To start the test, click **Run**. When in the Infinite Loops mode, the test will run until you click **Stop**.

6. In **Loop Count** you can see the number of loops tested. The number of **Errors** should always be: 0. If the test shows one or more errors, your hardware has probably not been installed correctly. We recommend that you perform the following steps:

    1. Make sure that the hardware is installed correctly.

    2. Restart your computer.

Appendices

Appendix A: Profiles

The following table shows which profiles the Bluetooth Connection Kit currently supports and which role each profile plays:

The profile:	Supports the following:
Serial Port	Bluetooth COM port service, ActiveSync
Generic Access	All other profiles
Service Discovery Application	Service discovery
Dial-up Networking	DUN service (as data terminal)
Fax	FAX service (as data terminal)

Appendix B: List view icons

In the Bluetooth Neighborhood list view, the following icons are used to represent remote devices and remote services respectively:

Remote devices:

Desktop computer

Laptop computer

Server-class computer

Handheld PC/PDA

Palm sized PC/PDA

Cellular phone

Cordless phone

Smart phone

Unclassified phone

Modem

Peripheral

Unclassified

Remote services:

Bluetooth COM port

DUN

FAX

Index

Advanced link policy, 44, 45
Basic functions, Bluetooth Neighborhood, 13
Bluetooth bonding, 47
Bluetooth COM port link establishment, 24
Bluetooth COM port settings, 21
Bluetooth COM port, what is, 20
Bluetooth COM ports, general information, 20
Bluetooth COM ports, how to add, 22
Bluetooth COM ports, how to associate and remove profiles, 23
Bluetooth COM ports, how to delete, 22
Bluetooth COM ports, interoperability, 21
Bluetooth COM ports, profiles, 20
Bluetooth Configuration Tool, 53
Bluetooth Configuration Tool – Bluetooth COM Ports dialog box, 21
Bluetooth Configuration Tool, how to open, 21
Bluetooth device class, 41
Bluetooth Neighborhood, 8
Bluetooth Neighborhood properties, 40
Bluetooth Neighborhood properties – General dialog box, 40
Bluetooth Neighborhood properties – Settings dialog box, 41
Bluetooth Neighborhood window, 10
Bluetooth Neighborhood, how to open, 9
Bluetooth unit settings, 49
Bluetooth unit state indication, 49
Bluetooth unit, how to enable/disable, 49
Bonding expiration, 48, 51
Bonding expiration, remote device settings, 52
Class of local device, 41
COM port link establishment, 24
COM port settings, 21
COM port, what is, 20
COM ports, general information, 20
COM ports, how to add, 22
COM ports, how to associate and remove profiles, 23
COM ports, how to delete, 22
COM ports, interoperability, 21
COM ports, profiles, 20
Connectability mode, 46
Default Bluetooth bonding expiration, 48
Device class, 41
Device discovery, 14
Device discovery length, 42
Device discovery period, 42
Device discovery, manually or automatically, 42
Device discovery, settings, 42
Device name, 13
Devices, icons, 55
Devices, remote, in list view, 12
Diagnostics, 53
Diagnostics dialog box, 53
Disabling Bluetooth unit, 49
Disconnecting, 17
Discoverability mode, 46
DUN, 29
Enabling Bluetooth unit, 49
Encryption mode, 46
Expire discovered devices, 43
FAX, 36
Getting started, 8
Help, 19
Historical information, remote device, 51
Icons, list, 55
Interoperability, Bluetooth COM ports, 21
Interoperability, profiles, 11
Introduction, 8

Link establishment, 16
Link level security, 46
Link policy settings, advanced, 44
List view, 12
List view icons, 55
Local device name, 13
Local device settings, 38
Local loopback test, 53
Local profile properties, 38
Local profiles and services, 11
Local profiles, interoperability, 11
Local profiles, list, 54
Name of local device, 13
Online help, 19
Previously discovered devices, 42
Profile properties, 38
Profiles and services, 11
Profiles, interoperability, 11
Profiles, list, 54
Remote device properties, 50
Remote device properties – General dialog box, 50
Remote device properties, general information, 51
Remote device settings, 50
Remote device settings, bonding expiration, 52
Remote device settings, trust, 51
Remote device settings, trust relationship, 52
Remote device, historical information, 51
Remote device, services used, 51
Remote devices, icons, 55
Remote devices, in list view, 12
Remote devices, view details, 18
Remote services, icons, 55
Remote services, in list view, 12
Security mode, 46
Security, link level, 46
Security, settings, 45
Serial devices, 20
Serial Port Profile, 21
Service discovery, 15
Services and profiles, 11
Services, icons, 55
Services, remote, in list view, 12
Settings, Bluetooth Neighborhood properties, 41
Status information, 17
Trust relationship, 51
Trust relationship, remote device settings, 52
Trust, remote device settings, 51
Trust, settings, 43